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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT PAPER NUMBER

1753

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,711

Applicant(s)

KOJIMA ET AL.

Examiner

Rodney G. McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/801,977.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12-12-03.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kikukawa et al. (U.S. Pat. 6,329,036).

Regarding claim 11, Kikukawa et al. teach a method of manufacturing an information recording medium including a substrate and recording layer disposed above the substrate. The method comprises a vapor deposition method such as sputtering. The recording layer comprises Ag, In, Sb and Te as main components and Ge or nitrogen (N). The nitrogen is incorporated into the recording layer by sputtering in an atmosphere containing nitrogen gas in addition to a rare gas such as argon. The recording layer is a phase reversible recording layer which changes between a crystal phase and amorphous phase by irradiation from a laser beam (Fig. 1; Column 4 lines 57-61; Column 4 lines 48-51; Column 10 lines 8-15; Column 12 lines 51-64)

Regarding claim 12, Kikukawa et al. teach that the vapor deposition method is a sputtering method. (Column 10 lines 8-15)

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Regarding claim 13, Kikukawa et al. teach utilizing nitrogen and argon for the sputtering. (Column 10 lines 8-15)

Regarding claim 15, Kikukawa et al. teach that the thickness of the recording layer can be 9.5 nm to 50 nm. (Column 10 lines 64-65)

Claims 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohno et al. (U.S. Pat. 6,033,535).

Regarding claim 11, Ohno et al. teach a method of manufacturing an information recording medium including a substrate and recording layer disposed above a substrate. The method includes forming the recording layer by a vapor deposition method. The recording layer comprises Ge, Te, Sb, and an additional elements of Ag, Cr and nitrogen (N). The recording layer is transformable phase reversibly between a crystal phase and an amorphous phase by an irradiation of an energy beam. (Column 4 lines 30-39; Column 5 lines 4-20; Column 5 lines 40-56; Column 6 lines 3-9; Column 13 lines 8-33; Column 12 lines 45-63; Fig. 7)

Regarding claim 12, Ohno et al. teach that a sputtering method can be used to form the film. (Column 12 lines 45-55)

Regarding claim 13, Ohno et al. teach that the sputtering can utilize argon gas and nitrogen gas. (Column 12 lines 45-55)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikukawa et al. (U.S. Pat. 6,329,036) in view of Ohno et al. (U.S. Pat. 6,033,535).

Kikukawa et al. is discussed above and all is as applies above. (See Kikukawa et al. discussed above)

The differences between Kikukawa et al. and the present claim is that the deposition rate is not discussed. (Claim 14)

Regarding claim 14, Ohno et al. teach that the deposition rate can be controlled depending on the substrate shape, Target Substrate distance, target shape, and so on. (Column 8 lines 48-52) Therefore the deposition rate is a result effective variable and

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Applicant's deposition rate can be achieved given that sputtering and the same materials for sputtering are being utilized by Ohno et al, the prior art.

The motivation for utilizing a particular deposition rate is that it allows for controlling the target life. (Column 8 lines 48-52)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Kikukawa et al. by utilizing a particular deposition rate as taught by Kikukawa et al. because it allows for controlling the target life.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (U.S. Pat. 6,033,535) in view of Kikukawa et al. (U.S. Pat. 6,329,036).

Ohno et al. is discussed above and all is as applies above. (See Ohno et al. discussed above.

The differences between Ohno et al. and the present claims is that the deposition rate is not discussed (Claim 14) and the thickness of the recording layer is not discussed (Claim 15).

Regarding claim 14, Ohno et al. teach that the deposition rate can be controlled depending on the substrate shape, Target Substrate distance, target shape, and so on. (Column 8 lines 48-52) Therefore the deposition rate is a result effective variable and Applicant's deposition rate can be achieved given that sputtering and the same materials for sputtering are being utilized by Ohno et al, the prior art.

The motivation for utilizing a particular deposition rate is that it allows for controlling the target life. (Column 8 lines 48-52)

Regarding claim 15, Kikukawa et al. suggest that the recording layer should be 9.5 nm to 50 nm. (See Kikukawa et al. Column 10 lines 64-65)

The motivation for utilizing a particular thickness for the recording layer is that it allows for having the property of a reversible phase change layer without effecting other layers. (Column 10 lines 64-68; Column 11 lines 1-8)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ohno et al. by controlling the deposition rate as taught by Ohno et al. and to have utilized a particular thickness for the recording layer as taught by Kikukawa et al. because it allows for controlling the target life and for maintaining the reversible phase change property.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rodney G. McDonald
Primary Examiner
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RM
September 20, 2006